

A
T R E A T I S E
ON
INLAND NAVIGATION

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TREATISE, &c.

TO demonstrate the great advantages to be derived to the public, and to individuals, from Inland Navigation, was, on the first introduction of Canals into this kingdom, a subject that required, in its discussion, all the abilities of a well-informed and logical writer. The difficulties arising from prejudices, which at that day might with propriety be stiled national ones—such as the invasion of private property,

at that time deemed sacred—the dissevering and mutilating the vineyard enjoyed as the patrimony from father to son for many generations,—as also the clashing of interests, which, though varied in the present day, were then not less numerous;—these difficulties to rational men, whose minds were not enlightened by the ray of what was then called *enthusiastic* patriotism, appeared insurmountable: and we cannot too much admire the perseverance and address of those whose sound reasoning could disperse the clouds that so deeply enveloped so grand a design; nor can we sufficiently revere the magnanimity of those august assemblies whose deliberations and statutes so strongly evince
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that noble minds are ever open to conviction.

In treating, at this day, on a subject of such national importance, it must be impossible to steer clear of the imputation of plagiarism, especially under the eye of those, whose ideas are expanded by a liberal education, and whose indefatigable zeal in the service of their country has prompted them not only to extend their researches through the island we inhabit, but to cull the essence of every thing, both useful and ornamental, from the most distant parts of the habitable globe.—But to those who serve their country within a more limited circle, and whose industry forms

the strongest link in the chain of society, this Treatise will perhaps need no apology:—under this idea, therefore, the following observations are with great deference submitted to the candid perusal of the public.

But before we proceed, it may not be improper to turn our eyes to the period in which this island first emerged from a state of barbarism; to admire her rapid progress in the cultivation of arts and sciences, and to trace our vast increase of inland and foreign trade, from which, under divine providence, we have derived those resources which have insured us the blessings of liberty at home, and placed us high in the
scale

scale of national importance. While every one feels the happy effect, few can be ignorant of the *cause*; and it may perhaps be unnecessary to observe, that *Trade* is the cause from which that happy effect is produced.

Trade is the basis of our greatness, the source of our wealth, and the very soul of our national existence. Every thing therefore that tends to promote our trade, and extend our commerce, demands our encouragement; and every individual who lends his assistance to effect those salutary purposes, has some claim, if not to the *thanks*, at least to the *indulgence* of his fellow citizens,

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That inland communication by water is beneficial to a trading country, is an axiom that will readily be admitted ; but though the good resulting therefrom may be consolidated under the general term of “ *an easier and less expensive mode of conveying heavy articles of consumption,*” yet the subject may with propriety be divided into separate heads ; and the advantages being thus separately descanted upon, the reader will be enabled the more readily to make his conclusions.

In the first place, by such inland communication, the Manufacturer may procure at much less expence his Coal, Soap, Dye-stuff, Lead, Bar-iron, Tin, Copper,
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~~and Coal~~;—the Builder his Stone, Slate, Tile, Brick, Lime, and Timber;—the Husbandman will likewise have it in his power to fertilize his farm, by mixing the different strata of soil, such as Chalk with the Sands, and Sand with the Clay; and the benignant effects of Lime and Marl will spread, in proportion as the facility of procuring them increases. To these may be added, the advantage the farmer must necessarily reap, as well by decreasing the number of his horses, as by substituting oxen in the tillage of his land;—a mode of husbandry which cannot be too warmly recommended, when we consider that the ox may earn his provender; and that horses, by reason of their consuming so
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great a share of the produce of our land, may in some degree be considered as a national evil. That these benefits will ultimately center in the consumer, is an aphorism too well understood to need a comment. But while the writer is pointing out these advantages, he is well aware that he is laying himself open to the strictures of the husbandman, as well as the land owner :—the husbandman will ask, and the land owner will join him in the question; if the consumption of oats, beans, and hay is lessened, what means can be devised for paying the rent of such lands as are at present appropriated to the growth of those commodities? The answer is evident; the culture of turnips, saint-foin,

foin, and artificial grasses, may be extended; part of the lands may be converted to grafs for the rearing and fattening of cattle for our necessary uses; other parts may be sown with hemp, flax, tobacco, and such other plants as are now imported, though congenial to our soil; and the residue thereof may be dedicated to the grand object of suppling timber for the future navies of Great Britain:—but the land owner for himself will ask, Why are those, in whom the permanent interest in this island is vested, to make sacrifices for the emolument of the manufacturers, who may properly be called a fluctuating body of men, whom caprice may induce to settle in other climes? This

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is an apposite question ; but the land owner must recollect, that, for the security and advancement of *his property*, his guardians and his representatives for the time being have already incurred a debt, the annual interest of which at this day amounts to the enormous sum of ten millions and upwards, besides the current expences for the defence and support of government. It is well known that the landed property of this kingdom is unequal to such a burthen ; and if commerce cannot, as heretofore, contribute its *capital* share, the deficiency must ultimately fall on the land owner. The sophister will perhaps assert, that, from the mode of husbandry the writer has here recommended,

much

much evil has already arisen to the state, and that ruin must be the unavoidable consequence. This subject has been enlarged upon by able and voluminous writers, who, with great speciousness, have condemned that mode; but for the avidity with which these tracts have been sought after and perused, the authors are more indebted to ingenuity than common sense; for while dearth and scarcity are synonymous terms; while plenty shall be deemed preferable to famine, abjectness, and want; while Grenville's salutary Corn Bill exists as a law; and till the contemplative mind shall conclude that the Almighty has abated in his providence to mankind, because the hills as well as the valleys

valleys laugh and sing; till then it may be affirmed, that, however specious their reasoning, those authors have set up an hypothesis, which never has been, nor ever will be proved.

In enumerating the advantages of Inland Navigation, the most strenuous advocates in its favour will be brought to confess, that, although partial evil ought not to defeat the design which has for its object universal good, yet in-
 somuch as the measure of that evil may be compared with the good, it will in the same degree operate as alloy to its sterling merit; and will incline the considerate man to examine with attention, as well the benefits as the inconveniencies

veniencies that may arise from such undertakings. To render this subject less complicated, and that the evils arising from any *one mode* of Inland Navigation may not be adduced as objections against the *others*, it will not be improper to proceed in its discussion under three separate heads.

First, Rivers made navigable by the removal of obstructions.

Second, Rivers made navigable, as well by the removal of obstructions, as by placing locks and wears for the purpose of penning back the water, thereby adding to the depth, and decreasing the natural rapidity of the stream.

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Third,

Third, Inland Canals, cut and formed of such width and depth as the craft to be navigated thereon may require, having locks so placed that boats going up or down the Canal may have a proper and sufficient supply of still water.

1st. *Respecting Rivers made navigable by the removal of obstructions.*

In the earliest periods of history, we are told, that the inhabitants of this island were not insensible of the peculiar benefits they derived from the liquid element that surrounded them: the extension of those benefits to the interior parts of the island, which were more valuable by reason of their being less exposed to the depredations of their
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transmarine enemies, was an acquisition fraught with much good, and attended with no one inconvenience; it was esteemed an object of great national importance by the founder of our freedom, and such as called forth the particular attention of the renowned Alfred, at the very æra when he was laying the foundation of the most powerful and enlightened empire in the world. But though in the present age we are indebted to our ancestors for the many substantial proofs they have given us of their laudable attention to the good of posterity; yet the rational mind will deem it no impeachment of our gratitude if we now behold those great efforts in no other light than as useful

hints to be improved and enlarged, when peace and a well settled government should afford opportunity and encouragement. This will naturally induce us to extend our enquiries to the benefits and inconveniencies arising from that sort of Inland Communication by water set forth under the SECOND Head, viz.

Rivers made navigable as well by the removal of Obstructions, as by placing Locks and Wears for the purpose of penning back the water, thereby adding to the depth, and decreasing the natural rapidity of the Stream.

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If with pleasure we contemplate the great strides our forefathers made towards perfection, by adopting the system which is here meant to be treated upon, we must find *that* pleasure not a little abated when we consider that at this period, and under *this mode*, commenced the greatest evils and inconveniences that the landed property of this realm has ever sustained by Inland Navigation; and whether we turn our thoughts to the Swale, Aire, or Calder in Yorkshire; to the Waveney, which divides Norfolk from Suffolk, or trace our favourite Thames from Windsor to Cricklade, we shall on the first view be at a loss to determine whether the benefits that arise to the state by this *ea-*

fier mode of conveyance, are or are not more than counterbalanced by the damage thereby done to thousands of acres, the most valuable in our island.

Thus much may be said of the mode which constitutes the *Second* Head in our arrangement: and though it may be observed, that several matters which might be urged as essentials both for and against the question are here omitted, yet, as it is hoped and believed that the two sorts of Inland Navigation already commented upon have arrived at their *ne plus ultra*; and as in the discussion of the remaining Head those matters must necessarily come forward, and will in that place be more properly
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descanted upon, we shall proceed to the discussion of the THIRD Head, namely,

The benefits and inconveniencies arising from Inland Canals, cut and formed of such width and depth as the craft to be navigated thereon may require; having Locks so placed, that Boats passing up and down the Canal may have a proper and sufficient supply of still water.

As little more than negative merit is ascribed to the *first* mode, and the benefits accruing to society from the *second* are represented to be as it were inundated, and almost totally swallowed up by the evils consequent and necessary to their attainment, the reader will be

led to believe that the writer of this small tract wishes to convince him that the *summum bonum* of Inland Navigation is only to be met with in the *third* mode; and under this impression he will naturally expect that every argument that can possibly be adduced to recommend CANALS, will here be sedulously arranged to his view; but so far is it from the intention of the writer to mislead, that, on the contrary, he wishes fairly and candidly to state the *inconveniencies* as well as the *benefits* attending such Canals, leaving it to the reader to make his own conclusions therefrom.

To this end he will proceed to point out the principal objections which may
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be adduced against Canals in general, and then give such answers thereto as will naturally occur ; by which means both the *benefits* and *inconveniencies* attending CANALS will be brought to a more clear point of view.

The objections to CANALS arise chiefly from the several inconveniencies set forth in the following Items :

First, The small streams, which heretofore have been scarcely sufficient for the supply of water for cattle depasturing the higher lands, are diverted.

Secondly,

Secondly, The Farmer is deprived of the benefits he has heretofore enjoyed of watering his meadows which lay by the side of those streams.

Thirdly, Manifest injury is done to the owners of water mills, as well those employed in the grinding of corn, as those whose powers are applied to the engines necessary in our manufactories.

Fourthly, Estates are severed, and the owners and occupiers thereof are thereby subjected to various inconveniencies which the building of numerous bridges will not entirely remove ; besides which, a part of the land is in a manner annihilated,

hilated, and other part thereof covered with unproductive soil; and as Canals are mostly formed in low grounds, there is every reason to conclude that the land so annihilated, or so covered with unproductive soil, is valuable beyond the average of the country where such Canal is made.

Fifthly, The security of those monies which have been liberally advanced for the public service on turnpike roads is endangered; to which may be added,

Sixthly, The future existence of those roads is partly negated, because the tolls on light carriages and horses, and
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~~no~~ such cattle, carts, and waggons as may hereafter travel thereon, cannot possibly enable the Trustees to keep down the interest of such monies, much less to pay off the principal, renew the acts, and keep the roads in repair.

Seventhly, The number of our seamen is considerably reduced by the conveying *within land*, coal and other heavy articles which have heretofore been conveyed by *sea*, whereby the finews of our national strength must be debilitated.

Eighthly, Government will be deprived of a duty of five shillings per chaldron
on

on all coal conveyed by *Canals* instead of being carried *coastwise*.

Having thus pointed out the principal objections *to Canals*, the writer will now proceed to give such answers thereto as may in some degree obviate those objections, and at the same time he will endeavour briefly to state such *benefits* as arise from this mode of Inland Navigation.

The *first* Item, respecting small streams, must be fully admitted, because where nature has given us the *least* water, art, in such a work as a Canal, requires the *most*. To obviate this inconvenience therefore, the Engineer may be directed

to

to make ponds or sink wells, and money may be given to the owners of the estate by way of compensation for the expence attending their future repair.

As to the *second* Item :—the injury to be sustained by the farmer, in his water meadows, may be estimated at various prices, from five to twenty shillings per acre ; and in such proportion as the annual value is decreased, in the like proportion ought to be estimated the detriment to the fee, which the proprietors of the Canal may make good by purchase, or the annual value thereof may remain as a perpetual charge on the Canal.

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The same answer may be given to the *third* and *fourth* Items; as the inconveniencies therein stated may be estimated, and proper compensation made to the parties injured thereby.

Something similar to this may be said respecting the inconveniencies stated in the *fifth* and *sixth* Items respecting turnpike roads; but it is presumed that the Legislative Assembly of Great Britain, who make equity the basis of their laws, will not readily pass an act whereby the property of individuals may in the least degree be endangered.

As to the *seventh* and *eighth* Items, they are too apparent to be denied.—

To

To remove those objections, therefore, we must refer to the august Assembly we have just mentioned : for while the safety, honour, and welfare of the state, are the objects of their parliamentary pursuits, it is not for an individual to direct their councils, but to pray the Almighty to prosper their endeavours.

Thus have we attempted to obviate, as far as is possible, the principle inconveniencies attending Canals. It remains therefore to consider what are the peculiar *advantages* attending this mode of Inland Navigation.

The benefits arising from Inland Navigation in general have been already
so

so fully explained in the former part of this Treatise, that it is thought unnecessary to repeat them. That all those benefits may be ascribed to *Canals* in a greater degree than to any *other* species of Inland Navigation is an axiom so self-evident, that it would be trespassing on the patience of the reader to offer any arguments to prove it. To *those benefits*, which ALL must admit to be of the greatest and most essential importance, as well to the nation at large as to individuals, the following remark may with propriety be added.

It must on all hands be admitted, that the evils which are so much complained of in countries where the *second*

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species

species of Inland Navigation has been adopted, cannot be removed while the *Locks* and *Wears* necessary for such Navigation shall remain—whereas, by substituting *Canals*, the rivers may be conveyed in more direct courses, and the water, which, by being penned back, now renders the country, for miles, unwholesome for man and beast, will, on removal of those obstructions, make its ready way to the sea ; and then, and not till then, shall we behold rosy health bloom in those honest faces heretofore made squalid by disease.

Having now brought to the reader's view such leading features as may the better enable him to determine on the
best

best mode of conducting Inland Navigation, we shall here dismiss the general subject, and offer a few apposite remarks on *Canals*.

That a *Canal* made through an *unpeopled* country is almost as useless as a *Canal without water*, is a maxim we must allow to be prettily conceived, especially if we extend our ideas to the *Deserts of Arabia*; but as experience has taught us, that the *Exports* and *Imports* cannot always be estimated by the *number of inhabitants* in a district, we shall contrast the above maxim with another, viz.

That the *benefits* of a *Canal* may be estimated by its *Tonnage*; and, after hazarding a few opinions, shall leave the reader to determine which *maxim* of the two, if either, is founded in error.

The *populous* districts are in general the richest in respect of soil, and are chiefly grass land.

The *unpeopled* districts (if such there are in England) are, including the downs and sheep walks, much inferior as to soil; but almost every part thereof that will bear a crop, wherewith the reaper may fill his hand, is converted to tillage.

In

In favour of the *populous* district, we must admit, that there are as many farms of *two* hundred pounds *per annum* within a given distance from the Canal, as there are farms of *one* hundred pounds *per annum* within the same distance in the *unpeopled* district; or, in other words, we may say the land in the *former* is worth twice as much *per acre* as the land in the *latter* district. Let us therefore make a calculation of the *Exports* and *Imports* upon a farm of *two* hundred *per annum* in the *populous* district, and upon a farm of *one* hundred *per annum* in the *unpeopled* district.

We

We will suppose the farmer in the *populous* district takes to market the following commodities, viz.

	TONS.
Cheese, — —	10
Salted Butter, —	1
	—
Making in the whole	11
	—

	TONS.
We will likewise suppose the farmer in the <i>unpeopled</i> district to takes ^{to} market 136 sacks of } 17 wheat, eight sacks to the ton, equal to }	

	TONS.
306 sacks of barley, beans,	} 34
oats, and other grain, which,	
on an average, may fairly be	
estimated at 9 sacks to the ton,	
equal to	}

Making in the whole	51
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If these calculations are well founded, it will appear that the *Exports* from a farm of *one* hundred pounds *per annum*, in the *unpeopled* district, are nearly *five times as great* as from a farm of *double* its value in the *populous* district. As to the *Imports* they are chiefly manure and fuel. The manure may be nearly

nearly equal in each district; and as to fuel, it is generally known that the dairy-maid heats the milk with wood, and that coal fires cut no great figure in the grazier's, the dairy-man's, or the farmer's houses: all other articles of consumption are too trifling to include in any computation of Imports.

The corn farmer may perhaps think, that the weight of his wool should be added to his 51 tons; but it may reasonably be answered, that the farmer's wool, as well as the grazier's fat oxen, and the dairy-man's pigs and calves, are not likely to ride to market in a boat.

From

From these remarks the reader will easily determine which of the two *contrasted maxims* is best founded; and, where a Canal is proposed, and a doubt shall arise as to the tract it ought to take, he will be enabled to form a more satisfactory opinion which course will be most beneficial to the country at large, and best secure the immense sum of money required for so great an undertaking.

It may be said by the sanguine promoters of Canals, that if the whole money necessary for the forming a Canal in any district whatever, is ready to be advanced, and the Subscribers are fully satisfied as to its security, the inter-

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ference of others is merely officious, and must proceed from some local prejudices. How far this position may be deemed reasonable it may be unnecessary to determine; but as an undertaking of this nature may be sometimes chimerical, and is always attended with some degree of risk, the utmost caution ought to be used previous to its being carried into execution. Proper surveys and estimates should be made, and all local prejudices entirely laid aside; and whatever mode may on due consideration appear most beneficial to the public, as well as the mortgagees, whose interest must be considered as reciprocal,—that mode ought most certainly to be adopted.

It

It may be added, that the impartial suggestions of the willing and well informed ought most seriously and dispassionately to be attended to; for if, after all the plans that might be thought feasible shall have been examined, any alteration or amendment should be pointed out, whereby the great advantages of Canals to the country might be extended, or by which the great expenditure might be decreased, *either* of which must undoubtedly tend to the better security of the mortgagees, such alteration ought not to be rejected: for, after a work of such magnitude and expence shall, under the sanction of a law, be completed; whatever are the errors which may be pointed out, as to
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the tract of the Canal, such errors must ever remain, for no *Act* can be obtained to correct them, so long as freedom of debate is the indefeasible privilege of the House of Commons ; so long as the Lords place equity in their senatorial chair ; and so long as a beloved Sovereign, whose greatest ambition is to be stiled, The Father of his People, shall sit on the throne of Great Britain.

F I N I S.

